

During the oceanographic cruises data on transparency were collected from all the stations in the Adriatic sea during the period from 1956 to 1990. Transparency was measured by Secchi disc (30 cm). The transparency of the Adriatic sea is taken only at stations on the open sea to avoid the irregular variations of the transparency of coastal and channel waters (Fig.1).



Fig 1. Positions measurements by Secchi disc on the open Adriatic sea

Total data number was divided into two periods, earlier period (1956-1971) and recent period (1972-1990) in table 1.

Table 1. The average of the values of the transparency of the sea water is measured by Secchi disc (m). The figures in brackets denote the number of measurements

Open Adriatic sea areas	P e r i o d	
	(1956 - 1971)	(1972 - 1990)
North	19.4 (150)	13.9 (223)
Middle	26.3 (740)	22.7 (281)
South	27.4 (189)	22.0 (404)
Average	25.5 (1079)	20.2 (908)

Simple statistical data analysis (annual, seasons and monthly average measurement of the transparency values) shows us that for all open sea areas from the north to the south the transparency shows a decrease trend in the recent period (1972-1990) in comparison to earlier period (1956-1971). This trend of decreasing transparency values may be a good predictor for showing us the increasing pollution of the sea water. The increasing of pollution appeared with long and intensive appearance of "red tide" not only in the coastal area but also in the part of the open sea for the period of last few years.

Results of data analysis and comparisons of the both periods will be given in tables and figures.

Also, data analysis shows that average decreasing transparency values for all area on the open Adriatic sea is 5.3 m (20.3%). On the other hand, however, the changes are better pointed out at Fig 2.

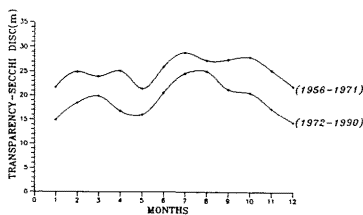


Fig 2. Transparency month-to-month variations at stations for the earlier period (1956-1971) as well as for the recent period (1972-1990)

It is quite obvious that transparency has been reduced for all 12 months for the recent period (1972-1990). Fig 2. also shows that transparency decreases at all stations in May and increase in July or August. The climate origin influences the shown decreasing and increasing of the transparency of the sea in the particular periods and given months is biggest cause of shown values, as well as, the constant seasonal variation of the sea water transparency.

Similar data analysis will be undertaken at the north part, as well as, at the middle and at the south part of the Adriatic sea.

The given statistical data analysis of the sea water transparency despite all the lack of numbers and dispersion can be used as a contribution for the further search of the optical properties of the Adriatic sea.

REFERENCES

- JERLOV N.G., 1968.- Optical oceanography, Elsevier Publishing Company, Amsterdam, 194p.
 MOROVIC M., 1986.- Long term transparency changes, *Rapp.Comm.int.Mer Médit.*, 29:182-183.
 TESIC M. & VUCAK Z., 1967.- Fizicko-oceanografski aspekti prozirnosti mora s osvrtom na uslove prozirnosti Jadrana, *Hidrografski godisnjak* 1966, 83-126.
 TESIC M. & VUCAK Z., 1976.- Prozirnost Jadranskog mora, *Hidrografski godisnjak* 1974, 129-137.
 ZORE-ARMANDA M. et al., 1991.- Hydrographic properties of the Adriatic sea in the period from 1971 through 1983, *Acta Adriat.*, Vol 32., No 1., pp 32-35, Split.

***OPTICAL DATA BASE RDB/VMS - VAX 8350, HIRH,1990